II. TECHNICAL MATERIAL

AVAILABLE: Library of Congress

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BLYUMIN, I.G., doktor ekon. nauk, prof.[deceased]; VASILEVSKIY, Ye.G., kand. ekon. nauk, dotsent; KAFENGAUZ, B.B., doktor istor. nauk, prof.; MINDAROV, A.T., kand. ekon. nauk, dotsent; MOROZOV, F.M., kand. ekon. nauk, dotsent; POLYANSKIY, F.Ya., doktor istor. nauk, prof.; UDAL'TSOV, I.D., prof., red. [deceased]; OZIRA, V.Yu., red.; GEORGIYEVA, G.I., tekhn. red.

[History of economic thought] Istoriia ekonomicheskoi mysli; kurs lektsii. Moskva, Izd-vo Mosk. univ. Pt.1. 1961. 511 p. (MIRA 14:10)

(Economics)

UDAL'TSOV, M. (selo Poludino, Severo-Kazakhstanskaya oblast')

Inoperative television recievers. Radio no.9:15 S '60. (MIRA 13:10)

(Television--Receivers and reception)

GRACHEV, Fedor Vasil'yevich, kand. ekonom. nauk; MALAFEYEV, Aleksey Nikolayevich, kand. ekonom. nauk; UDAL'TSOV, O.A., red.; GURDZHIYEVA, A.M., tekhn. red.

[What is the fund of socialist accumulation] Chto takoe fond sotsialisticheskogo nakopleniia. Leningrad, Ob-vo po raspr. polit. i nauchn. znanii RSFSR, 1961. 61 p. (MIRA 15:4)
(Economics)

KUZNETSOV, Pavel Ivanovich, kand. ist. nauk; RATGAUZER, Mark Yakovlevich, kand. ist. nauk; LAVRIKOV, Yu.A., kand. ekon. nauk, nauchnyy red.; UDAL'TSOV, O.A., red.; GURDZHIYEVA, A.M., tekhn. red.

[Role of the intelligentsia in the struggle for technological progres; some forms of cooperation between science and industry] Rol' intelligentsii v bor'be za tekhnicheskii progress; formy sodruzhestva nauki i proizvodstva. Leningrad, Ob-vo po raspr. polit. i nauchn. znanii RSFSR, 1961. 64 p. (MIRA 15:2)
(Technology) (Research, Industrial)

USOV, Nikolay Ivanovich; SHCHUKIN, Valentin Timofeyevich; GAL'PERIN, S.Yu., nauchnyy red.; UDAL'TSOV, O.A., red.; GURDZHIYEVA, A.M., tekhn. red.

[Even in days of peace there is room for heroic deeds] I v mirnye dni est' mesto podvigam. Leningrad, Ob-vo po rasprostraneniiu polit. i nauchn. znanii RSFSR, 1962. 50 p. (MIRA 15:10)

(Labor and laboring classes)

DENISOV, Yakov Andreyevich, kand. ekonom. nauk; ZVONKOV, V.F., nauchnyy red.; UDAL'TSOV, O.A., red.; PETROVA, M.P., tekhn. red.

[International socialist division of labor] Mezhdunarodnoe sotsialisticheskoe razdelenie truda. Leningrad, Ob-vo po rasprostraneniiu polit. i nauchnykh znanii RSFSR, 1962. 60 p. (MIRA 15:3)

(Communist countries--Division of labor)

ANASTASENKO, F.I., kand.ekon.nauk; DAVYDOV, I.I., kand.ekon. nauk, nauchnyy red.; SAFRONOVICH, L.B., red.; UDAL'TSOV, O.A., red.; GURDZHIYEVA, A.M., tekhn. red.

[Transformation of farm labor into industrial labor] Prevrashchenie sel'skokhoziaistvennogo truda v raznovidnost' industrial'nogo. Leningrad, Ob-vo po raspr. polit.i nauchn. znanii RSFSR, 1962. 67 p. (MIRA 15:7)
(Agriculture--Economic aspects)

BORISOV, Valeriy Vasil'yevich; BAL'YAN, Kh.V., prof., nauchn. red.; FEDOROVICH, N.V., nauchn. red.; UDAL'TSOV, G.A., red.

[Miracles performed without "miracles"; with addenda describing chemical experiments] Chudesa bez "chudes"; s prilozheniem opisaniia khimicheskikh opytov. Leningrad, Obshchestvo "Znanie" RSFSR, 1965. 39 p. (MIRA 18:10)

ZVONKOV, Vasiliy Fedosovich, kand.ekon. nauk; KUTS, M.K., nauchn. red.; UDAL'TSOV, O.A., red.

[Role of engineering personnel in the building of communism] Rol' inzhenernykh kadrov v stroitel'stve kommunizma. Leningrad, Ob-vo "Znanie" RSFSR, 1965. 51 p. (MIRA 18:10)

UDAL'TSOV, V. A.

Udal'tsov, V. A. "Feeding Siberian stags on ensilage,"
Karakulevodstvo i zverovodstvo, 1949, No. 2, p. 5658.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 17, 1949).

UDAL'TSOV, V. A.

Mosses.

Sphagnum as bedding for minks. Kar. i zver, 5, no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1953/2 Uncl.

UDAL'TSOV, V-A

Category : USSR/Radiophysics - Application of Radiophysical Methods I-12

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4656

Author : Vitkevich, V.V., Udal'tsov, V.A.
Title : Observations of the Radio Waves from the Source in Taurus-A When the Latter is Eclipsed by the Moon.

Orig Pub : Astron. tsirkulyar, 1956, 22 apr., No 169, 5-6

Abstract : Report on preliminary results of observations of a discrete source of radio waves from Taurus-A, when the latter is eclipsed by the moon. The observations were carried out at 6.5 and 3.5 meters near Moscow on 30 November 1955 and 24 January 1956.

Since there was no increase in the amplitude of the interference record and in the shift of the maxima at the instants preceding the first and after the fourth contacts, it is concluded that the ionosphere of the moon is more than 10^{-4} rarer than that of the earth. The angular dimensions of the source are determined ($5' \pm 1'$ in direct ascent and $6' \pm 1.5'$ in declination). The irregularities of the distribution of intensity over the radiating region were detected, and also a shift in the coordinate of the effective center of the radio waves relative

Card : 1/2

Category : USSR/Radiophysics - Application of Radiophysical Methods I-12

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4656

to the optical center by 2.5', exceeding the error in the determination of the coordinates. A possible explanation for these peculiarities is offered.

Card : 2/2

UDAL'TSOV, V.A.

AUTHORS: Vitkevich, V.V. and Udal'tsov, V.A. 109-12-12/15

TITLE: A New Radio-telescope (Novyy radioteleskop)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, No.12, pp. 1548-1549 (USSR)

ABSTRACT: The construction of a new, large radio-telescope was commenced in the Crimean research station of the Physics Institute of the Acad.Sc. USSR in July, 1957. The device (see the photograph on p.1548) is in the form of a paraboloidal segment, having a diameter of 31 m: it is dug into the soil and covered with concrete and metal. The telescope is fitted with a special trolley in its focus, which permits the adjustment of the directional pattern of the antenna and tracking the investigated radiation source. The telescope can be used to study the radiation of Taurus-A and that of the galaxy and metagalaxy, as well as that of individual discrete sources. Some preliminary measurements on the radiation of the sun and the Cancer nebulae were carried out at wavelengths of 50 to 10 cm. There is 1 photograph and 3 Slavic references.

SUBMITTED: August 3, 1957

AVAILABLE: Library of Congress

Card 1/1

KUZ'MIN, A.D.; UDAL'TSOV, V.A.

Polarization of the radiation of the Crab Nebula on a 10 cm wave length. Astron. tsir. no.187:14-16 D '57. (MIRA 11:6)

1. Fizicheskiy institut im. P.N. Lebedeva AN SSSR.
(Nebulae) (Radio astronomy)

UDALTSOV, V. A.,

with VITKEVICH, V. V., KUZMIN, A. D., and SOLOMONOVICH, A. E., "Radioimage of the Sun on the ≈ 3 cm wavelength,"

with KUZMIN, A. D., "Polarization of the 10 cm Radioemission of the Crab Nebula,"

papers submitted for the Symposium on Radio Astronomy, 30 Jul - 6 Aug 58, Paris

SOV-109-3-6-9/27

AUTHORS: Vitkevich, V. V. and Udal'tsov, V. A.

TITLE: Application of the Interference Radio-Reception for the Registration of Rapid-Changing Processes (Primeneniye interferentsionnogo radiopriyema dlya registratsii bystro protekayushchikh vo vremeni protsessov)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 6, pp 784-793 (USSR)

ABSTRACT: The registration of rapid-changing processes by means of radio-interference techniques can be done by means of an interferometer with two receivers, such as shown in Fig.1, or by the interferometer shown in Fig.2. Both these interferometers register the interference in antiphase. The interferometer of Fig.1 is simpler, but that of Fig.2 is preferable since the combining of the two input signals is done at the intermediate frequency. The measurements can also be carried out by the method of "mobile radiation pattern", such as described by Ryle or Little or by Vitkevich (Refs.6, 7 and 1). Block schematics of two interferometers

Card 1/6

Application of the Interference Radio-Reception for the Registration of Rapid-Changing Processes

of this type are shown in Figs.3 and 4. The above interferometers have a number of disadvantages and a novel equipment was therefore designed. The equipment was used by the Crimean Station of the Physics Institute of the Soviet Academy of Sciences for the investigation of the distribution of the radio-brightness of Taurus-A during its lunar eclipse as well as in a number of other measurements. The interferometer is represented by the block schematic of Fig.5, in which the various blocks denote the following units: (1) antennas, (2) high frequency preamplifiers operating at 6.5 m and having a bandwidth of 3 Mc/s and a gain of 45 db, (3) 2-channel quartz-crystal local oscillator operating at 100 kc/s, (4) a frequency multiplier which increases the frequency of 1 channel to 34.2 Mc/s, (5) mixers, (6) a multiplier which increases the frequency of the 2nd channel to 34.3 Mc/s, (7) a combining or adding stage, (8) an intermediate frequency amplifier operating at 11.75 Mc/s and having a bandwidth of Δf_B = 1 Mc/s, (9) a square detector, (10) an amplifier operating at 100 kc/s and having a bandwidth of

Application of the Interference Radio-Reception for the Registration of Rapid-Changing Processes

Δf_H = 1 kc/s , (11) a linear amplitude detector, (12) a potentiometer and (13) a galvanometer. Functioning of the interferometer is analysed in some detail and it is concluded that the equipment can operate as a modulation interferometer (when using the second detector as a synchronous operating unit) or as a compensation interferometer (when both channels of the local oscillator operate at the same frequency). The equipment can also operate simultaneously as a modulation-compensation or a simple modulation interferometer; in the first case, the output quantity is proportional to the amplitude of the interference pattern, while in the second case the interference is registered without the DC component. The above equipment can be modified into an interference polarimeter which can be used in the investigation of the degree and the nature of the polarisation of the radio radiation of various discrete sources (the Sun, solar spots, radio-stars). The polarimeter or the polarisation interferometer is shown in the block schematic of Fig.6. It

Application of the Interference Radio-Reception for the Registration of Rapid-Changing Processes

consists of the following units: 1) local oscillator; 2), 3) and 4) are the units for producing 3 local frequencies, f_1, f_2 and f_3 such that $f_3 - f_1$ determines the modulation frequency of the polarised signal, while the difference $f_3 - f_2$ determines the modulation frequency of the combined signal; 5) mixers; 6) a combining stage; 7) an intermediate frequency amplifier; 8) a square detector; 9) an amplifier operating at the modulation frequency of the polarised signal; 10) an amplitude detector; 11) a potentiometer (a compensator); 12) a synchronous detector for separating the interference pattern of the polarised signal; 13) an amplifier operating at the modulation frequency of the combined signal (polarised and non-polarised); 14) an amplitude detector; 15) a potentiometer having a low depth of compensation; 16) a galvanometer which indicates the level of the combined signal; 17) a galvanometer which indicates the level of the interference of the polarised signal; the antenna A_1 is polarised in two mutually perpendicular directions and represents two independent systems; the antenna can be

Card 4/6

Application of the Interference Radio-Reception for the Registration of Rapid-Changing Processes

in the form of a paraboloid fitted with two independent mutually-perpendicular linear radiators. Each of the two systems of antenna A_1 can work independently with the second antenna, A_2, whose polarisation coincides with one of the systems of A_1. The polarisation interferometer was tested experimentally and the results are shown in Figs.7 and 8. The curves of Fig.7 show the change in the power received by the two channels when the main plane of the polarimeter was rotated from 0 to 180°; the input signal was partially polarised. Fig.8 represents the change of the phase of the interference lobe when the plane of polarisation was rotated by 90°. The paper contains 8 figures and an appendix; it is

Application of the Interference Radio-Reception for the Registration of Rapid-Changing Processes

shown in the appendix that if the synchronous detector of the interferometer is replaced by a compensation-type detector, this should not lead to a decrease in the sensitivity of the modulation equipment. There are 8 figures and 9 references, 6 of which are Soviet and 3 English.

ASSOCIATION: Fizicheskiy institut AN SSSR im. P. N. Lebedeva (Physics Institute of the Soviet Academy of Sciences, imeni P. N. Lebedev)

SUBMITTED: November 22, 1956

1. Radio receivers - Interference 2. Interferometers - Applications 3. Radio receivers - Testing equipment 4. Radio receivers - Test results

3(1) SOV/33-35-5-4/20

AUTHORS: Udal'tsov,V.A., and Vitkevich,V.V.

TITLE: On the Intensity Distribution of the Discrete Source of Radio Emission, Taurus-A (O raspredelenii intensivnosti diskretnogo istochnika radioizlucheniya Telets-A)

PERIODICAL: Astronomicheskiy zhurnal, 1958, Vol 35, Nr 5, pp 713-721 (USSR)

ABSTRACT: The results of the present paper are already announced in [Ref 3]. By the interferometric method on 3.5m the authors studied the distribution of radio brightness of Taurus-A during its occultation by the Moon on November 30, 1956. The observation method is described. The authors found a non-uniform distribution of radio brightness and non-radial symmetry. The source of radio emission is elongated in the SE direction. The major and minor axes of the region of radio emission and of the optical region are determined and compared. The obtained results are discussed theoretically. The authors thank S.B.Pikel'ner for the discussion of some questions.
There are 5 figures, and 15 references, 9 of which are Soviet, 3 American, 1 English, 1 French, and 1 Dutch.

ASSOCIATION: Fizicheskiy institut imeni P.N.Lebedeva Akademii nauk SSSR (Physical Institute imeni P.N.Lebedev of the AS USSR)

SUBMITTED: August 24, 1957

Card 1/1

20-118-6-11/43

AUTHORS: Vitkevich, V. V., Kuz'min, A. D., Salomonovich, A. Ye., Udal'tsov, V. A.

TITLE: A Radio Image of the Sun on 3,2 cm Wave Length (Radioizobrazheniye Solntsa na volne 3,2 cm)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 6, pp. 1091-1093 (USSR)

ABSTRACT: In July, 1957, the construction of a new great radiotelescope which consists of a stationary parabolic reflector with a diameter of 31 m was begun on the Crimean station of the Institute of Physics imeni P. N. Lebedev of the Academy of Sciences of the USSR (Krymskaya stantsiya Fizicheskogo instituta im. P. N. Lebedeva AN SSSR). The geometric axis of the paraboloid is inclined by + 22° in the meridian plane which facilitates the annual observation of the radio radiation of the sun in June-July. In July, 1957, the investigation of the two-dimensional distribution of the intensity of the radio radiation over the sun disk was started on the wave lengths 3,2 and 10 cm. For this work the radio-spectrometers worked out by A. Y. Salomonovich and

Card 1/3

A. D. Kuz'min were used. The occurring signal was modulated by means of ferrites and circular wave guides. The carrying-out of the measurements is discussed in short. These measurements made possible the recording of the curves of the distribution of intensity of the radio radiation over the sun disk, i.e. on a series of subsequent strips the orientation of which approaches the north-south direction. The totality of these curves permits the construction of a two-dimensional image of the distribution of the radio brightness. The small width of the diagram on the wave 3,2 cm makes possible the detection of a very detailed image of the distribution, i.e. a radio image of the sun. On the wave 10 a rather coarse image of the distribution is obtained because of the great width of the diagram. The radio isophotic lines of the sun on the wave lengths 3,2 and 10 cm are illustrated in several figures. In the case of passage of the sun single regions with increased radio brightness occur in the diagram which is observed as a dazzling flash in the recording. With the wave length 3,2 cm regions with increased radio brightness are observed which are distributed very irregularly over the disk. The position of

these regions is very similar to the position of the groups of the optic spots observed on the same days. The radio isophotes on the wave length 10 indicate the existence of active regions the position of which is also similar to the position of the optic spots and of the active regions with the wave length 3,2 cm. At present the measuring results obtained are exploited and compared to the optical data. There are 1 figure and 1 reference, which is Soviet

ASSOCIATION: Fizicheskiy institut im P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev, AS USSR)

PRESENTED: September 25, 1957, by D. V. Skobel'tsyn, Member of the Academy, USSR

SUBMITTED: September 19, 1957

3(1),24(4) SOV/33-36-1-5/31

AUTHORS: Kuz'min,A.D., and V.A.Udal'tsov

TITLE: An Investigation of the Polarization of 10-cm Radiation of the Crab Nebula

PERIODICAL: Astronomicheskiy zhurnal, 1959,Vol 36,Nr 1, pp 33-40 (USSR)

ABSTRACT: On November 28, 1957 the extended full assembly of the committee for radio-astronomy heard a report about the contents of the present paper.
The polarization of the radio emission of the Crab nebula at a wave length of 9.6 cm was measured at the Crimean Radio-Astronomical Station of the FIAN from October to November 1957 with a 31 m radio telescope by means of a polarizing radiometer. The preparation of the apparata was carried out by the engineers M.T.Levchenko, L.I.Matveyenko, and the technicians M.V.Komarov, and V.V.Loktionov. The sensitivity of the radiometer amounted to 0.6 - 0.9° K for a bandwidth of 10 Mc/s and a time constant of 20 sec. The antenna temperature of one component of non-polarized emission was $T_a = 100°$. The authors observed a linear polarization of radio emission of the Crab nebula with a degree of $3 \pm 0.5\%$. The position angle $\varphi = 142° \pm 5°$, and coincides with the

Card 1/2

An Investigation of the Polarization of 10-cm Radiation of the Crab Nebula

SOV/33-36-1-5/31

direction of the greatest extension of the Crab nebula. The authors estimated the depolarization effects of the interstellar medium and the medium of the Crab nebula. They thank V.V. Vitkevich for giving the theme.
There are 8 figures, and 10 references, 7 of which are Soviet, and 3 Dutch.

ASSOCIATION: Fizicheskiy institut imeni P.N.Lebedeva Akademii nauk SSSR (Physical Institute imeni P.N.Lebedev of the AS USSR)

SUBMITTED: January 10, 1958

Card 2/2

Udal'TSOV, V.A.

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AUTHORS: Vitkevich, V.V., Kuz'min, A.D., Sazonov, Yu.D., Udal'tsov, V.A.

TITLE: Radioastronomical Observations of the Second Soviet Cosmic Rocket

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 65-68

TEXT: The frequently used method of radiointerference was employed for observing radio signals of the second Soviet cosmic rocket. The angular coordinates of the container were measured by means of the scientific instruments, furthermore the power of the signals received and its variations with time. A buzzer signal was used because of the increased stability of the instruments, the first and second heterodyne were stabilized by means of quarts. The distance between the antennas of the radiointerferometer, which were directed to the east, was 175.9 m. The angle between the perpendicular on the line connecting the antennas and the direction to the signal source was measured by means of the radiointerferometer. Formula (1) is given for the determination of this angle, and formula (3), in which the Doppler effect is considered, is derived for the azimuth of the signal source. The radiointerferometer is adjusted according to

Card 1/3

the intensity of cosmic radio sources. This system permitted exact determination of the moment at which the Soviet rocket hit the Moon, as well as of the place at which the container is located. Fig. 1 shows a copy of the recorded signal in the final stage of the rocket's flight to the Moon. It is shown that the recording lost its sinusoidal character (caused by interferences) as soon as the container hit the Moon. The rocket reached the Moon on September 14, 1959, 0 h 2 min 22 sec. The place of the container was established from formula (3) and is shown in Fig. 3. The power of the signal received was determined by comparing it with the intensity of the cosmic radio source of Cygnus-A. Fig. 3 further illustrates recordings made during the last days before the arrival of the rocket on the Moon. Periodic intensity variations of 45 seconds, 45 minutes, and 10 - 15 minutes were observed. In this connection the authors refer to the periodic variation in the orientation of the container and to the Faraday effect detected in the ionosphere. There are 3 figures, 1 table, and 8 references, 7 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P.N. Lebedev of the Academy of Sciences of the USSR)

Card 2/3

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3.2300 (1062,1080)

AUTHORS: Vitkevich, V.V., Kuz'min, A.D., Sorochenko, R.L., and Udal'tsov, V.A.

TITLE: Results of radio-astronomical observations obtained with Soviet space rockets

PERIODICAL: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli, No.7, Moscow, 1961, pp. 23-31

TEXT: An important problem in satellite and rocket experiments is the determination of the coordinates of the space vehicles. Since the satellites and rockets usually carry a stabilized transmitter, the problem is reduced to the determination of the position of the radio source and is analogous to the radio-astronomical problem of the determination of the angular coordinates of discrete sources. Such determinations are usually carried out by the radio-interferometer method. The present authors have used this method in the observation of the radio signals from the first, second and third Soviet space rockets. The use of radio astronomical methods has enabled them to measure the intensity of the signals as well. The observations were carried out on 183.6 Mc/s. The apparatus and the experimental

Card 1/4

Results of radio-astronomical ....

method employed are described by the present authors in Ref.1 (Radiotekhnika i elektronika, 1961). The impact of the second space rocket container on the lunar surface occurred on September 14, 1959, at 0 hr 02 min 22±1 sec (this time is corrected for the time of propagation of the signal). The selenographic coordinates of the centre of the region of impact were found to be; latitude 30°, longitude -3° (crater Archimedes). During the observations of the first and second space rockets use was made of antennas with horizontal polarization. It is clear from the records obtained that in addition to a "quasi-sinusoidal" intensity variation due to interference there were also faster changes, which were apparently due to the rotation of the container. The period of these changes was 30-50 sec for the first and 40-60 sec for the second rocket. Comparisons of the records of signals from Soviet space rockets with those for known discrete sources of radio emission were used to estimate the intensity of the signal throughout the entire period of observations. The Cyg A source was used for the comparison. Figs. 4 and 5 show the variations in the intensity of the signals (slow component) in units of the power reduced to an isotropic emitter at the distance of the

Results of radio-astronomical ....

rocket. A consideration of these curves shows that in addition to the fast changes mentioned above there were also slower variations in the signal from the first space rocket (characteristic periods 8-12 min and 40-60 min). In the case of the second rocket there was a period of 45 min reducing to 10-13 min. These changes may be due to the rotation of the container and the Faraday effect in the earth's atmosphere. In the case of the third rocket antennas with both horizontal and vertical polarization were employed. Typical records are reproduced. Analysis of the intensity records with two mutually perpendicular polarizations showed that there was signal fading on October 4, 5, 6, 12 and 17, 1959, with a period of about 3 min. In addition there was a signal variation reducing the amplitude to about 50% which had a period of about 1.5 min. These variations are apparently due to the rotation of the automatic inter-planetary station. There was some evidence that there was a further variation with a period of 20-30 min, and this may be due to the Faraday effect. The energy flux p was calculated from the expression

$$p = j\Delta f \cdot m$$

Card 3/8 4

where j is the energy flux from a discrete source with a continuous spectrum, Δf is the bandwidth of the receiver used to record the discrete source, and m is the ratio of the space-rocket to discrete-source signal. The emitted power P was calculated from:

$$P = p 4 \pi R^2$$

where R is the distance from the earth (isotropic source emitting equally in both polarization components).
There are 7 figures and 7 references: 2 Soviet and 5 English.
The four most recent English language references read:
Ref.4: P. Moore, Nature, V.184, 502, 1959.
Ref.5: H.P. Wilkins, Nature, V.184, 502, 1959.
Ref.6: G. Fielder, Nature, V.185, 11, 1960.
Ref.7: G. Whitfield, Paris Symposium on Radio Astronomy, Stanford, California, 1959, p. 299.

Card 4/8 4

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D201/D302

AUTHORS: Vitkevich, V.V., Kuz'min, A.D., Matveyenko, L.I., Sorochenko, R.L., and Udal'tsov, V.A.

TITLE: Radioastronomical observations of Soviet- cosmic rockets

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 9, 1961, 1420 - 1431

TEXT: This is a description of a specially designed radio interferometer with phase modulation, as used in tracking the first three Soviet space rockets. The principle of a two channel phase divergent reception was used to detect changes in the signal amplitude, due to relative changes of the position of transmitter with respect to the lobe of interference diagram. In receiving a signal with continuous spectrum the fluctuation sensitivity in units of temperature (T_a) of the antenna is given by the well known equation

Card 1/7

Radioastronomical observations ...

$$\delta T_a = a_1 T_o F_e \sqrt{\frac{1}{\Delta f \tau}}, \qquad (7)$$

where a_1 - a dimensionless factor depending on the properties of the receiver, T_o - standard ambient temperature; $F_e = (T_a + T_{in})/T_o$ - the equivalent input temperature determined by noise of the receiver; $T_{in} = (F_r - 1)$; F_r - noise factor of the receiver; T_a - antenna temperature; τ - time constant of the output cct; Δf - passband between input and detector. The bloc diagram of the receiver is shown; the operating frequency was 183.6 Mc/s, that of the transmitter in the rocket capsule. The interferometer had two parabolic antennae 8 x 16 and 11 x 28 m, spaced in the E-W direction by approximately 176 m. Total length of both antennae was 8 m. The antennae were reilluminated from their focal points by specially designed radiating systems, assuring best possible illumination for two linear polarizations perpendicular with respect to each other. Yu.P. Ilyasov participated in their design. A schematic of the

Card 2/7

Radioastronomical observations ...

illuminating system is also shown, the three resonant dipoles were connected by equal lengths of a PK-20 (RK-20) cable to a common feeder. The directional patterns and utilization factors of the antenna areas were determined from solar radiation. For both antennae, the area utilization factor was about 0.5. Phase modulation at a frequency 72 c/s was achieved by changing the phase by 180° by means of periodical variation of the electric length of the wall connecting the local oscillator with one of the mixers, so that the received signal was amplitude modulated at this frequency. The phase modulator was designed around a standard hybrid switch. The switching elements were light house diodes type 6Д3Д (6D3D) driven by the sinusoidal modulating voltage. The attenuation introduced did not exceed 2 db. The change in the diode slopes by way of changing the bias and the insertion of the modulator into the local oscillator circuit permitted the parasitic amplitude modulation of earlier systems to be reduced considerably. The modulator used permitted the radio meter with phase modulation to be changed into that with AM, this was achieved by suppressing the modulating voltage at one of the diodes. The signals were preamplified at UHF by amplifiers

Radioastronomical observations ...

placed directly at the antennae. The noise factor of UNF preamplifiers was 5. The amplified signals from each antenna were changed after buffer stages to the 1st IF of 6.95 Mc/s and fed into two channels with a 90^0 phase shift between them. A double frequency conversion was used. The 190.554 mc/s frequency of the first local oscillator was produced by a thermostatically controlled crystal oscillator working at 9.074 mc/s with subsequent multiplication by 21. Its relative instability was 10^{-6} and hence the passband of a monochromatic signal was chosen to be 2Kc/s. To secure reception with the signal frequency shifting due to the Doppler effect, step tuning within 8 Kc/s was provided formed by 5 resonant circuits detuned in 2 Kc/s steps. On top of the first L.O. could be continuously tuned within ± 3.2 Kc/s. For calibration purposes, when a under-pass band is required, the second amplifier pass band could be switched from 2 to 10 Kc/s without affecting tuning and gain. The signal, detected by a synchronous detector, was taken from an RC output filter with time constant τ = 26 sec. This value permits achieving the required fluctuation sensitivity and in practive does not affect the interference amplitude. All power sup-

Card 4/7

Radioastronomical observations ...

plies were stabilized with a stabilization factor of about 10^3. The signals were recorded on electronic automatic recorders type ЭПП-9 (EPP-09) monitored by one minute time markers. The experimental data of the receiver sensitivity are tabulated. The experimental sensitivity was about half that calculated from Eq. (7). The maximum sensitivity of the interferometer, corresponding to the minimum detected power levels, are also tabulated. In making final adjustments (M.V. Gorelova participated in the final adjustment method evaluation) constant and timevarying parameters had to be considered. The constant parameters are γ - angle between the horizontal plane and the projection of the base onto a vertical east-west plane, θ - angle between the east-west direction and projection of the base onto a horizontal plane and D - base of the interferometer distance between the antennae are determined by fixed antenna geometry: $\eta = \varphi_n/\lambda$ on the other hand is determined by electrical lengths of the cables and phase characteristics of input stages and can vary with time. A geodesical survey gave the following results: D = 175.896 m; $\gamma = 2°44'$; $\theta = -14'$ so that the expression

Card 5/7

Radioastronomical observations ...

for the azimuth of the source is given by

$$A = 179^{\circ}46' + \arcsin\left[\frac{0.0093006}{\sin z}(n - \eta) - 0.047669 \operatorname{ctg} z\right], \quad (10)$$

where n - is the number of the lobe and z - the zenith angle of the source. The parameter η was determined from

$$\eta = \frac{t_r - t_{\Lambda\,\text{source}}}{T}, \quad (11)$$

where T - the period of the interference lobe, t_r - the calculated and $t_{\Lambda\,\text{source}}$ - the real instant at which the source passes through the maximum of the interference diagram. Owing to the finite value of the output cct time constant, the instant $t_{\Lambda\,\text{source}}$ at which the source crosses the maximum of the diagram does not correspond with t representing the maximum deflection of the seconding instru-

Card 6/7

ment. $\Delta\tau$ thus was introduced, as given by

$$\Delta\tau = t_{\Lambda} - t_{\Lambda source} = \tau[1 - \frac{4}{3}(\frac{\tau}{T})^2] \quad (12)$$

in adjusting the arrangement. The above instrument and method of observations were applied to tracking the first, second and third Soviet- space rockets, launched January 2, September 12, and October 4, 1959, respectively; measuring their angular coordinates and measurements of the intensity of the received signal were also carried out. There are 8 figures, 3 tables and 11 references: 5 Soviet-bloc and 6 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: G. Fielder. Nature, 1960, 185, 4705, 11; H.P. Wilkins, Nature, 1959, 184, 4685, 502; P. Moore, Nature, 1959, 184, 4085, 502; J.G. Davies, A.G.B. Lovell, Nature, 1959, 194, 4685, 501.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR (Institute of Physics im. P.N. Lebedev, AS USSR)
SUBMITTED: October 4, 1960
Card 7/7

3,1730 (1126, 1127, 1129)
6,9417
9,9840

S/033/61/038/002/009/011
E032/E414

AUTHORS: Kuz'min, A.D., Salomonovich, A.Ye. and Udal'tsov, V.A.

TITLE: On the Radio Emission of the Planetary Nebulae NGC 6853 and NGC 7293

PERIODICAL: Astronomicheskiy zhurnal, 1961, Vol.38, No.2, pp.373-375

TEXT: The present authors have made an attempt to detect the radio emission of NGC 6853 and NGC 7293 on 9.6 cm. The NGC 6853 nebula was examined at the end of 1958 with the 31 m radio-telescope of the Krymskaya stantsiya (Crimean Station) of FIAN. The above radiotelescope has been described by V.V.Vitkevich and V.A.Udal'tsov (Ref.2) and the radiometer has been described by A.D.Kuz'min and V.A.Udal'tsov (Ref.3). The radiometer had a sensitivity of 0°.5 at a time constant of 20 sec. It is estimated that the flux density of radio emission due to the NGC 6853 nebula on 9.6 cm must be less than 4×10^{-26} W m^{-2} cps^{-1}. The NGC 7293 nebula was examined with the 22 m radiotelescope of FIAN at the beginning of 1960. This radiotelescope has been described by A.Ye.Salomonovich (Ref.4). It is estimated that the

Card 1/3

On the Radio Emission ...

flux density for the above two nebulae on 9.6 cm turns out to be at least by an order of magnitude lower than that reported by F.D.Drake and H.T.Ewen (Ref.1) on 3.75 cm. Since the accuracy of the present results is said to be higher by an order of magnitude than the results reported by Drake and Ewen, it is suggested that the latter are incorrect. Using the upper limits for the flux density, the present authors estimated the emission measure ME, the electron density n and the mass M of the above two planetary nebulae. These three quantities are estimated from the following formulae

$$ME = 38 \cdot 10^{26} p\varphi^{-3}; \quad (1)$$

$$n = \frac{48}{\varphi}\sqrt{\frac{P \cdot 10^{26}}{R\varphi}} \quad (2)$$

$$\frac{M}{M_\odot} = 4.8 \cdot 10^{-6} \varphi R^2 \sqrt{\varphi R p \cdot 10^{26}}, \quad (3)$$

where φ is the angular diameter of the source in fractions of a degree and R is the distance in parsecs. These formulae are

Card 2/4 3

S/033/61/038/002/009/011
E032/E414

On the Radio Emission ...

taken from G.Westerhout's paper (Ref.5). The estimates are summarized in the table. The angular dimensions of the nebulae which are quoted in the table are taken from B.A.Borontsov-Vel'yaminov's paper (Ref.6). The distances are taken from the latter paper and from the paper by I.S.Shklovskiy (Ref.7). There are 1 figure, 1 table and 7 references: 5 Soviet and 2 non-Soviet.

ASSOCIATION: Fizicheskiy in-t im. P.N.Lebedeva
Akademii nauk SSSR
(Physical Institute imeni P.N.Lebedev,
Academy of Sciences USSR)

SUBMITTED: June 7, 1960

Card 3/43

32437
S/033/61/038/006/006/007
E133/E435

3,1730 (1126, 1127, 1172)

AUTHORS: Kuz'min, A.D., Udal'tsov, V.A.

TITLE: The polarization of radio emission from the Crab Nebula in the 10 cm waveband

PERIODICAL: Astronomicheskiy zhurnal, v.38, no.6, 1961, 1114-1115

TEXT: The authors have communicated observations of the polarization of Crab Nebula in 9.6 cm range previously (Ref.1: Astron. zh., v.36, 1959, 33; Astron. tsirkulyar, no.187, 1957, 14) but corrections were not made in the earlier work for possible parasitic polarization in the apparatus. The observations were therefore repeated in May 1960 with a steerable 22 m radio telescope (Ref.2: A.Ye.Salomonovich, Radiotekhnika i elektronika, v.4, 1959, 2092). The data obtained were analysed by the method of least squares. The degree of polarization was found by comparison with a control signal which was 100% polarized. It was found that the degree of polarization in the Crab Nebula was $3.7 \pm 0.5\%$ and the position angle was $132 \pm 5°$. A comparison with two unpolarized sources (Cas A and Cyg A) indicated that the instrumental polarization did not exceed 0.5%. The data obtained with a stationary radiotelescope (Ref.1) may therefore be considered

Card 1/2

correct. The work reported there has been re-reduced to give a value of 3.2 ± 0.4% for the polarization and 137 ± 5° for the position angle. The average of these two results is therefore 3.5 ± 0.4% and 135 ± 3°. Observations were also made at a wavelength of 10.7 cm in June-July 1960, using a stationary radio-telescope of 31 m diameter (Ref.3: V.V.Vitkevich, V.A.Udal'tsov, Radiotekhnika i elektronika, v.2, 1952, 1548). It was found that the polarization was lower by 10% and the position angle decreased to 130 ± 3°. This agrees well with previous investigations. However, the changes in the position angle, noted in these investigations (Ref.4: C.H.Mayer, T.P.McCullough, R.M.Sloanaker, Report to the XIII General Assembly URSI, London, September 5-15, 1960) for wavelengths near 11 cm, appear to be improbable. There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to an English language publication is quoted in the text.

ASSOCIATION: Fizicheskiy in-t im. P.N.Lebedeva, Akademii nauk SSSR
(Physics Institute im. P.N.Lebedev, AS USSR)

SUBMITTED: February 10, 1961

36957
S/141/62/005/001/001/024
E032/E314

3,1710
3,1700

AUTHOR: Udal'tsov, V.A.

TITLE: Correlation polarimeter for the 20-centimetre band

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v.5, no. 1, 1962, 5 - 12

TEXT: The correlation polarimeter was developed for the detection of weak plane-polarized signals with a smooth spectrum, for use at the Krymskaya nauchnaya stantsiya FIAN (Crimean Scientific Station of FIAN). It is based on the two-channel reception method with separation of the correlated signal from uncorrelated noise (Ref. 1- S.J. Goldstein, Proc. IRE, 43, 1663, 1955; Ref. 2 - V.S. Voyutskiy - Radiotekhnika i elektronika, 5, 244, 1958). A block diagram of the polarimeter is shown in Fig. 1. The disadvantages of the correlation device are discussed and methods of reducing them are considered. The advantages of the correlation method in comparison with the modulation and compensation methods are pointed out. It is shown that a correlation polarimeter may be used to measure both the

4

Card 1/4

Correlation polarimeter ....

polarized and the unpolarized components of the signal. The polarimeter has the following characteristics: bandwidth 4 Mc/s; noise factor 5; time constant of the output filter 25 sec. The experimental sensitivity determined from the thermal equivalent was found to be 0.3 °K, whereas the calculated sensitivity for the above parameters was 0.1 °K. The polarimeter has been used in polarization studies of the radio-emission of the Crab nebula. Analysis of results obtained at 21 cm with a bandwidth of 4 Mc/s showed that the radio-emission of this nebula was partly linearly polarized, the degree of polarization being 0.5 ± 0.15%. The position angle of the plane of polarization was 82 ± 5°. There are 2 figures.

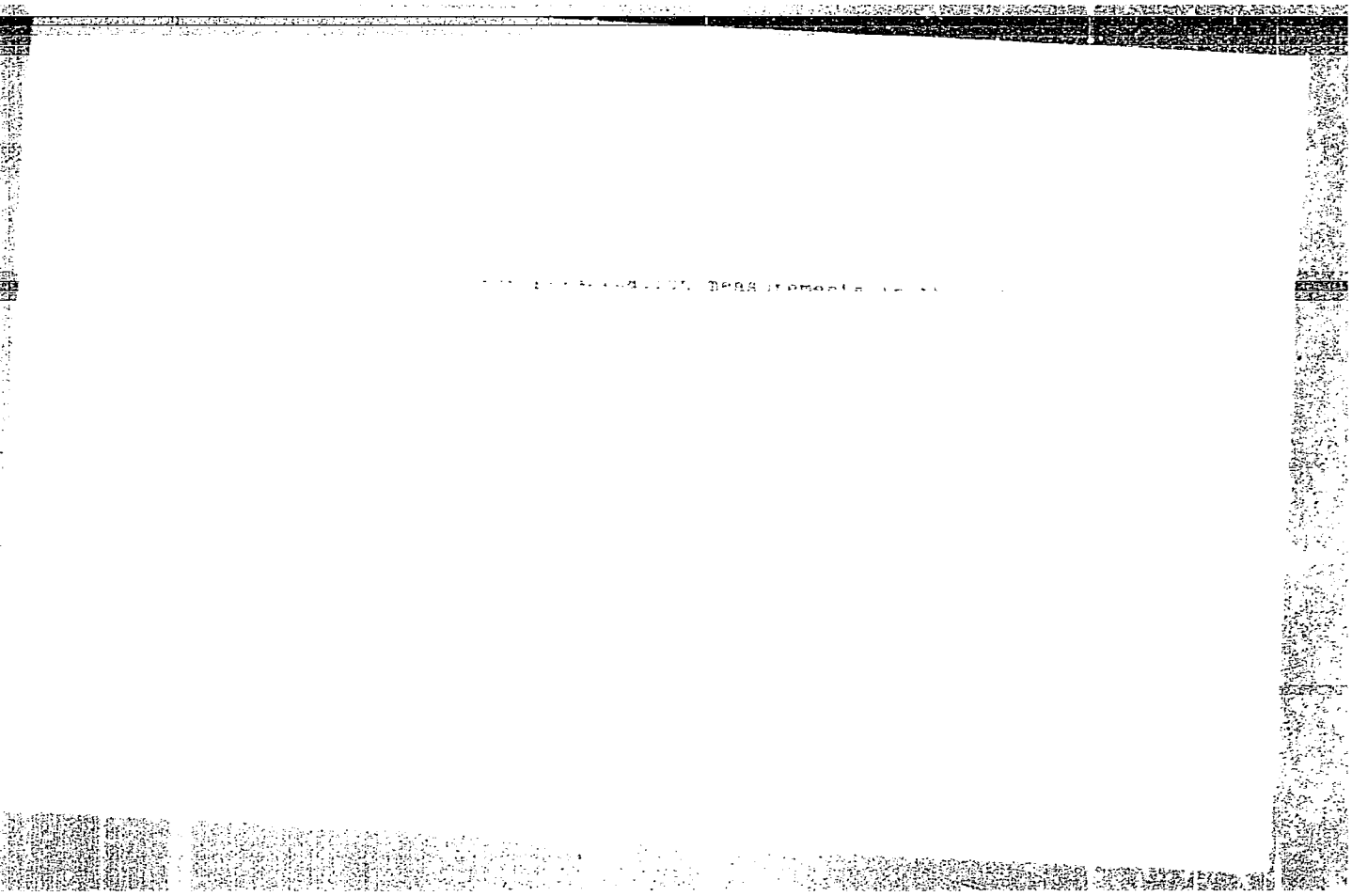
ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR (Physics Institute im. P.N. Lebedev of the AS USSR)

SUBMITTED: May 9, 1961

Card 2/4

UDAL'TSOV, V.A.

Theory of polarized radiation from the Crab nebula. Trudy Fiz. inst. 17:169-178 '62. (MIRA 15:12)
(Radio astronomy)



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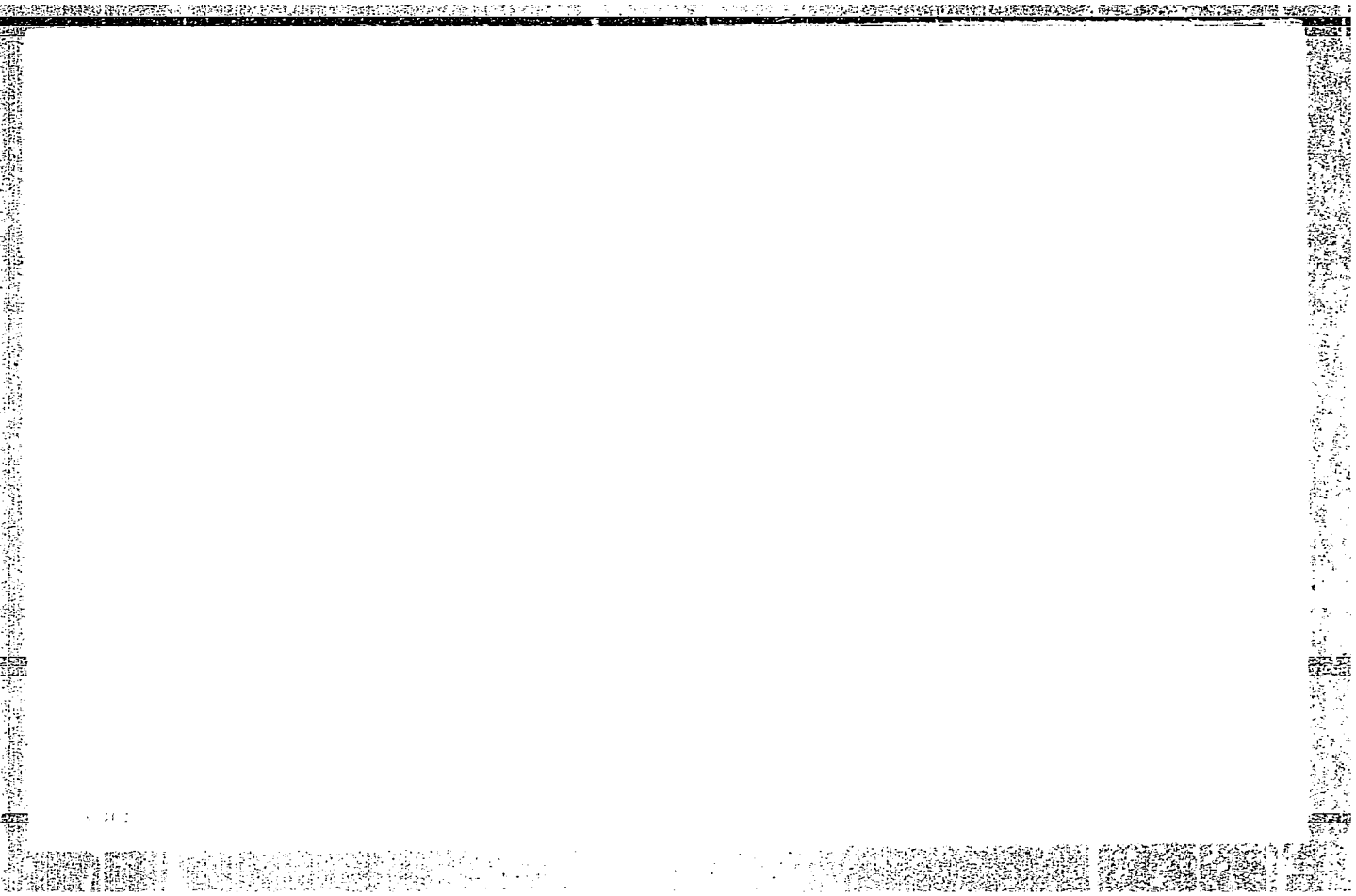

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001857810018-2"

UDAL'TSOVA, M. S.

"The Hypnotic Phase in Schizophrenia." Cand Med Sci, Inst for the Advanced Training of Physicians, Leningrad, 1953. (RZhBiol, No 3, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

TIMOFEYEVA, A.N.; SHKURKO, Ye.D.; UDAL'TSOVA, M.S.

Listerellal psychosis. Zh. nevropat. psikhiat., Moskva 53 no.8:625-631 Aug 1953. (CLML 25:4)

1. Department of Psychiatry of the State Order of Lenin Institute for the Advanced Training of Physicians imeni S. M. Kirov.

SHAPIRO, A.I.; UDAL'TSOVA, M.S.

Some serological peculiarities of patients with chronic alcoholism. Sbor. turda. Len. nauchn. ob-va nevr. i psikh. no.6:20-27 '59. (MIRA 13:12)

1. Iz serologicheskoy laboratorii Instituta imeni V.M.Bekhtereva (direktor - chlen-korrespondent Akademii pedagogicheskikh nauk RSFSR prof. V.N. Myasishchev, zav. serologicheskoy laboratoriyey - prof. A.I. Shapiro).

(ALCOHOLISM) (ANTIGENS AND ANTIBODIES)

ZHIEVICH, G.V.; UDAL'TSOVA, M.S.

Some data on change in the structure of neuropsychiatric diseases in the postwar period. Trudy Gos. nauch.-issl. psikhonevr. inst. no.20:87-94 '59. (MIRA 14:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy psikhonevrologicheskiy institut imeni V.M. Bekhtereva, Leningrad.
(MENTAL ILLNESS) (BRAIN--DISEASES)
(NERVOUS SYSTEM--DISEASES)

ZENEVICH, G.V.; KRUGLOVA, L.I.; PANFILOVA, Z.P.; UDAL'TSOVA, M.S.

Materials on the problem of improving the organization of psychoneurological services. Trudy Gos. nauch.-issl. psikhonevr. inst. no.24: 209-216 '61. (MIRA 15:5)

1. Organizatsionno-metodicheskiy otdel Gosudarstvennogo nauchno-issledovatel'skogo psikhonevrologicheskogo instituta imeni Bekhtereva. (LENINGRAD--NEUROLOGY) (LENINGRAD--PSYCHOTHERAPY)

ZENEVICH, G.V.; UDAL'TSOVA, M.S.

Materials for the analysis of the repeated hospitalization of schizophrenic patients. Vop. psikh. i nevr. no.9:522-529 '62. (MIRA 17:1)

1. Organizatsionno-metodicheskiy otdel (zav. - doktor med. nauk G.V. Zenevich) Leningradskogo nauchno-issledovatel'skogo psikhonevrologicheskogo instituta imeni V.M. Bekhtereva (dir. - B.A. Lebedev).

AUTHOR: Udal'tsova, N.I. 26-58-6-16/56

TITLE: Complexons in Analytical Chemistry (Kompleksony v analiticheskoy khimii) International Conference in Moscow (Mezhdunarodnyy simpozium v Moskve)

PERIODICAL: Priroda, 1958, Nr 6, p 74-75 (USSR)

ABSTRACT: The use of complexons in analytical chemistry and the prospective development of this new field was the subject of an international conference in November 1957 in Moscow. It was convened at the Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo Akademii nauk SSSR (Moskva) (Institute of Geochemistry and Analytical Chemistry imeni V.I. Vernadskiy of the USSR Academy of Sciences)(Moscow). The Conference heard reports on: Theoretical questions in the chemistry of complexons; the use of new indicators in complexonometric titration; the application of complexons in the analytical chemistry of rare elements; the synthesis, properties and prospective use of new complexons. Professor K.B. Yatsimirskiy lectured on "The Thermochemistry of Complex Compounds with Complexons", Professor P.N. Paley on "Complexon III, as a Reducing Agent" and Professor R.P. Lastovskiy on "Research Work in the Field of the Synthesis of New

Card 1/2

Complexons in Analytical Chemistry. International Conference in Moscow.

Complexons and Their Investigation". In the discussion the following prominent Soviet scientists participated: I.P. Alimarin, I.V. Tananayev, V.I. Kuznetsov, A.K. Babko, N.P. Komar' and others.

Card 2/2

1. Chemistry-Conference 2. Chemistry-Reports

SOV/75-13-5-10/24

AUTHORS: Przheval'skiy, Ye. S. (Deceased), Nikolayeva, Ye. B., Gal'tseva, N. I.

TITLE: The Determination of Uranium by Using Potassium Iodate (Primeneniye yodata kaliya dlya opredeleniya urana)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 5, pp 567-569 (USSR)

ABSTRACT: For the determination of uranium those methods are of interest that utilize the formation of compounds of tetravalent uranium which do not solve easily and are resistant against mineral acids. One disadvantage of this method is that the subsequent determination of uranium is difficult (Refs 1-5). In the paper under review the use of the iodate method for the immediate determination of uranium is discussed, which had been suggested before for the determination of thorium, zirconium and cerium (Refs 6,7). Uranium is transformed into its tetravalent stage by electrolysis at a mercury cathode (Ref 8). The tests showed that it was not possible to obtain precipitates of constant composition by precipitation according to the method of Kaufman (Ref 5). The quantity of a 10 per cent solu-

Card 1/4

tion of KJO_3 in 10 per cent H_2SO_4 (the same volume as in the initial solution) used for precipitation in this method had to be reduced by one half in case of a uranium content in the test solution of more than 5 mg; in case of smaller amounts of uranium (1-2 mg) a ratio of 2:3 between the iodate solution and the volume of the sample is favorable. After this, an 0.8 per cent solution of KJO_3 is added whose volume amounts to twice that of the original test solution (15-20 ml). The precipitate is filtered through a glass sinter pot and washed with a diluted solution of potassium iodate in sulfuric acid (0.4 per of KJO_3 in one per cent H_2SO_4) and then with alcohol and ether. The precipitate thus obtained can be dried at 100-120° until its weight is constant and it still retains its constancy at a temperature of 170°. If the precipitate was washed with a solution of KJO_3 and with alcohol only, decomposition starts at 60°. The content of uranium in the precipitate was determined by titration with permanganate and by glowing to U_3O_8. The iodate ion was determined iodometrically

after the precipitate was dissolved in H_2SO_4 and after the uranium was oxidized to its hexavalent stage with permanganate. The absence of potassium in the precipitate was determined with a microcrystalloscope with $H_2[PtCl_6]$ after destruction of the precipitate and separation of the uranium. The precipitate dried at 110-120° does not contain any water of crystallization. The precipitate formed under the given conditions therefore corresponds to the formula $U(JO_3)_4$ and may be used for the gravimetric determination of uranium. A titrimetric determination is also possible. For this purpose the precipitate is dissolved in H_2SO_4, mixed with a solution of KJ and titrated with thiosulphate. A portion of the iodine formed reacts with quadrivalent uranium: $U^{4+} + J_2 + 2\ H_2O = UO_2^{2+} + 2\ J^- + 4\ H^+$. Therefore, there are 22 (4.5 + 2) g equivalents of iodine for every atom of uranium. Copper and molybdenum do not form iodates under the conditions mentioned and can moreover be removed by electrolysis at a mercury cathode. Vanadium is reduced in the electrolysis and does not interfere with the de-

The Determination of Uranium by Using Potassium Iodate SOV/[illegible]-10/24

termination. Even a fifty-fold surplus of aluminum has no effect. Larger amounts of aluminum as well as divalent iron (even in small quantities) interfere with the determination. Therefore iron must be separated before determination. The results of a number of determinations of uranium according to the method discussed are quoted. There are 4 tables and 8 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 2, 1957

Card 4/4

UDAL'TSOVA, N. I.

AUTHOR: Bilimovich, G. N. SOV/75-14-4-30/30

TITLE: Section of Analytical Chemistry of the VIII Mendeleyev Congress on General and Applied Chemistry

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, pp 511-512 (USSR)

ABSTRACT: Approximately 300 persons participated in the work of the Department of Analytical Chemistry, among them representatives of various scientific research institutes, higher schools and industrial enterprises in Russia, scientists from China, Bulgaria, the ČSR, Poland, Hungary, and Italy. Approximately 70 reports were heard. In his opening speech I. P. Alimarin reported on the achieved results and on modern problems of analytical chemistry. I. V. Tananayev reported on the application of physicochemical analysis in heterogeneous systems for the solution of a series of problems of analytical chemistry. V. I. Kuznetsov reported on modern aims in the use of organic reagents; A. K. Babko showed at the example of halide and thiocyanate complexes the correlation between the stability of complexes and the position of the corresponding central atoms in the periodic system. V. M. Peshkova and V. M. Bochkova lectured on the stability of oximates of Cu, Co, and Ni as depending on the structure of the oxime molecule. V. P. Toropova lectured on the double character of reaction of some compounds in the formation of complexes. The problem of the application of heteropolyacids in analytical chemistry was dealt with in the lectures of Z. F. Shakhova and co-workers, and A. I. Kokorin and N. A. Polotebnova. A large number of lectures dealt with the use of new organic reagents in analysis: A. I. Busev and M. I. Ivanyutin reported on the application of dialkyl and diaryl dithiophosphoric acid for the separation of elements, A. I. Portnov used aryl arsonic acid and aryl phosphinic acid. R. P. Lastovskiy and his co-workers treated some properties of new complexons. The lectures of V. A. Nazarenko, G. G. Shitareva and A. I. Kononenko dealt with the photometric determination of a series of elements using fluorine derivates. A. I. Cherkesov lectured on the use of halochromation in analytical chemistry. R. M. Dobkina and T. M. Malyutina lectured on the determination of tantalum using differential spectrophotometry. Yu. V. Morachevskiy and I. A. Stolyarova reported on new highly sensitive analysis methods using an ultraviolet microscope. Several lectures dealt with methodical and theoretical problems of spectrum analysis (N. F. Zakhariy and G. A. Sheynin; S. Ya. Vaynshteyn and co-workers). N. S. Poluektov and M. N. Nikonova treated the perfection of flame photometry. Several lectures dealt with the determination of elements by polarography (S. I. Sinyakova; Z. B. Rozhdestvenskaya and I. A. Yarovoy; Ya. P. Gokhshteyn). New results in using fixed electrodes were reported by I. D. Panchenko and Yu. S. Lyalikov and co-workers. The lecture of N. I. Udal'tsova and P. N. Paley treated the use of amperometric titration with two electrodes in the chemistry of uranium and thorium. M. M. Senyavin showed possibilities of predicting the conditions of chromatographic separation of elements based on their position in the periodic system. T. A. Belyavskaya reported on the use of ion exchange in the investigation of the state of substances in solutions. A. S. Vernidub and V. I. Petrashen' lectured on the chromatographic separation of a series of elements, N. G. Polyanskiy reported on adapting the properties of ion exchanger resins, F. M. Shemyakin and associates reported on the chromatographic proof of sulfanilamide preparations in liquids of the organism. G. L. Starobinets and associates treated the application of high polymers in chromatographic analysis. The lecture of A. A. Zhukhovitskiy and N. M. Turkel'taub, O. Shay dealt with gas chromatography. Several lectures treated the use of radioactive isotopes for the chromatographic investigation of complex formation (D. I. Ryabchikov and associates), for the investigation of the co-precipitation mechanism of ions of rare metals with sulfides (N. A. Rudnev) and for determining rare elements by means of isotope dilution (I. P. Alimarin, G. N. Bilimovich). In the field of elementary organic microanalysis the lectures of M. O. Korshun, N. E. Gel'man and V. A. Klimova with associates have to be mentioned, who treated the elaboration of rapid micromethods for the simultaneous determination of several elements from one weighed portion of boron, fluorine and silicium-organic compounds.

Card 1/4

Card 2/4

Card 3/4

PALEY, P.N.; UDAL'TSOVA, N.I.

Amperometric titration of small amounts of thorium with a solution of complexon III. Trudy kom. anal. khim. 11:299-305 '60.
(MIRA 13:10)

1. Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo AN SSSR.
(Thorium--Analysis) (Acetic acid)

PALEY, P.M.; UDAL'TSOVA, N.I.

Use of the "dead-stop end point" titration method in a study of uranium (VI) complexes. Zhur. neorg. khim. 5 no.10:2211-2215 O '60. (MIRA 13:10)
(Uranium compounds)

PALEY, P.N.; UDAL'TSOVA, N.I.

Solubility of ethylenediaminetetraacetic acid in water, hydrochloric acid solutions, sodium chloride, and potassium chloride. Zhur. neorg. khim. 5 no.10:2315-2318 O '60. (MIRA 13:10)
(Acetic acid)

S/075/60/015/006/004/018
B020/B066

AUTHORS: Paley, P. N. and Udal'tsova, N. I.

TITLE: Reducing Properties of Ethylene Diamine Tetraacetic Acid

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 6, pp. 668-670

TEXT: It is known from publications that Ce^{IV}, Mn^{VII}, V^{V}, $S_2O_8^{2-}$, and others, oxidize ethylene diamine tetraacetic acid (Komplexon II) under certain conditions. The present paper deals with a thorough investigation of the reducing properties of ethylene diamine tetraacetic acid and its salts. The authors used for this purpose: 1) sodium ethylene diamine tetraacetate (molecular weight 372.2) purified by precipitation by means of methyl alcohol from aqueous solution, and ethylene diamine tetraacetic acid obtained from the sodium salt; 2) solutions of oxidizing agents: 0.043 M $Ce(SO_4)_2$, 0.080 M ammonium vanadate, and 0.100 M potassium permanganate; 3) 0.027 and 0.05 M solutions of Komplexon III. The experiments showed that the permanganate ion can be quantitatively titrated in 1 - 2 N

Card 1/3

sulfuric acid solution with a solution of Komplexon III (and vice versa). The end point of titration was confirmed visually from the disappearance of the permanganate color. The titration results are presented in Table 1. Table 2 gives the results of titration of a 0.043 M $Ce(SO_4)_2$ solution with a 0.050 M Komplexon III solution at pH 1 - 1.5 in the cold and on heating. In the oxidation of Komplexon II with Mn^{VII}, V^V, etc., carbon dioxide is liberated. The results of the quantitative determination of carbon dioxide obtained from Komplexon III oxidation by the gravimetric method (by means of CO_2 absorption by Ascarite) are summarized in Table 3. With increasing ratio of oxidizing agent (Ce^{IV} or Mn^{VII}) to Komplexon II, the number of CO_2 molecules set free per one molecule of Komplexon III increases (Fig.).

The ethylene diamino tetraacetic acid molecule is decomposed in acid solution under separation of four CO_2 molecules. The ethylene diamine tetraacetic acid was found to oxidize with an excess of 30% H_2O_2 solution both in acid and alkaline solution. The reaction, however, proceeds quickly and quantitatively only when the solution is boiled. It may be summarized that Komplexon II reacts with Mn^{VII} (in 1 - 2 N H_2SO_4) at the ratio of 1 mole of Komplexon II to 8 gramequivalents of oxidizing agent; in the

case of cerium^{IV}, this ratio holds only for heating. V^{V} and Cr^{VI} are reduced in acid solution only when heated in the presence of Komplexon II. The formation of formaldehyde (Ref. 8) was polarographically confirmed in the oxidation products of ethylene diamine tetraacetic acid with PbO_2; furthermore, condensation products of formaldehyde with amines, which also result in the oxidation of Komplexon, are assumed to be formed. There are 1 figure, 3 tables, and 8 references: 2 Soviet, 1 Swiss, 2 Czech, 1 Dutch, 1 German, and 1 US.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the AS USSR, Moscow)

SUBMITTED: June 15, 1959

PALEY, P.N.; UDAL'TSOVA, N.I.

Breaking down ethylenediaminetetraacetic acid by oxidation with hydrogen peroxide. Zhur.anal.khim. 16 no.5:649-650 S-O '61. (MIRA 14:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences U.S.S.R., Moscow.
(Acetic acid) (Oxidation)

UDAL'TSOVA, N.I.; SAVVIN, S.B.; NEMODRUK, A.A.; NOVIKOV, Yu.P.; DOMOLYUBSKAYA, T.S.; SINYAKOVA, S.I.; BILIMOVICH, G.N.; SERDYUKOVA, A.S.; BELYAYEV, Yu.I.; YAKOVLEV, Yu.V.; NEMODRUK, A.A.; CHMUTOVA, M.K.; GUSEV, N.I.; PALEY, P.N.; VINOGRADOV, A.P., akademik, glav. red.; ALIMARIN, I.P., red.; BABKO, A.K., red.; BUSEV, A.I., red.; VAYNSHTEYN, E.Ye., red.; YERMAKOV, A.N., red.; KUZNETSOV, V.I., red.; RYABCHIKOV, D.I., red. toma; TANANAYEV, I.V., red.; CHERNIKHOV, Yu.A., red.; SENYAVIN, M.M., red. toma; VOLYNETS, M.P., red.; NOVICHKOVA, N.D., tekhn. red.; GUS'KOVA, O.M., tekhn. red.

[Analytical chemistry of uranium] Analiticheskaia khimiia urana. Moskva, Izd-vo Akad.nauk SSSR, 1962. 430 p. (MIRA 15:7)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii.

(Uranium--Analysis)

UDAL'TSOVA, N.I.

Method of amperometric titration with two indicator electrodes for the determination of uranium. Zhur.anal.khim. 17 no.4: 476-480 Jl '62. (MIRA 15:8)

1. V.I.Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Uranium--Analysis) (Conductometric analysis)

LEVITSKIY, I.I.; UDAL'TSOVA, Ye.A.; GONIKBERG, M.G.

Production of pure cyclohexane by the catalytic hydrogenation of benzene containing thiophene. Zhur.prikl.khim. 35 no.1:204-206 Ja '62. (MIRA 15:1)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Cyclohexane) (Benzene) (Hydrogenation)

LEVITSKIY, I.I.; UDAL'TSOVA, Ye.A.; BOGOMOLOV, V.I.

Change in the hydrogenating and isomerizing activity of chromic oxide in the purification of catalysts by removing oxygen and water. Izv.AN SSSR.Ser.khim. no.9:1691-1693 S '64.
(MIRA 17:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

LEBEDKINA, Ye.D.; FEDOROV, V.M.; FAYNBERG, V.Ya., kand.fiz.-matem.nauk; BARCHUKOV, A.I., kand.tekhn.nauk; FESENKOV, V.G., akademik; KUCHEROV, N.F., doktor khim.nauk; DZERDZEYEVSKIY, B.L., prof.; SHAPIRO, G.S., doktor tekhn.nauk; KUIAGINA, O.S.; UDAL'TSOVA, Z.V., doktor istor.nauk; LIKHACHEV, D.S.

Brief notes. Vest. AN SSSR 32 no.1:119-130 Ja '62. (MIRA 15:1)
(Scientific societies) (Research)

UDALYKH, I.

Increase the functions of technologists and master. Mias. ind. SSSR 29 no.5:30 '58. (MIRA 11:10)

1. Upravleniye myasnoy i molochnoy promyshlennosti Sverdlovskogo sovnarkhoza.

(Meat industry--Quality control)

KORENNOY, Yu.P., inzh.; UDALYKH, Ye.M., inzh.

Stability of inclined workings mined along the worked-out area in the Karaganda Basin. [Trudy]VNIMI no.50:41-44 '61. (MIRA 17:10)

UDALYKH, Yu.I.

Selection of the optimum length of a hydraulic giant nozzle. Trudy NPI 137:89-93 '62. (MIRA 16:10)

BLAGOVIDOV, I.F.; SPEKTOR, Sh.Sh.; UDALYY, A.M., vedushchiy redaktor; VOLOKH, S.M., professor redaktor; ISMAYLOV, R.G., dotsent, redaktor

[Operation of oil refineries] Ekspluatatsiia neftepererabatyvaiushchikh zavodov. Pod red. S.M.Volokha i R.G.Ismailova. Baku, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, Azerbaidzhanskoe otd-nie, 1951. 199 p. [Microfilm] (MLRA 7:10)
(Petroleum--Refining)

MADERA, R.S.; NURIDZHANOV, G.D., FAYERMAN, I.L., redaktor; UDALYY, A.M., vedushchiy redaktor

[New technology for lowering and hoisting operations in underground repair of oil wells] Novaia tekhnologiia spusko-pod"emnykh operatsii v podzemnom remonte neftianykh skvazhin. Baku, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, Azerbaidzhanskoe otd-nie, 1952. 123 p. [Microfilm] (MLRA 7:10)
(Petroleum--Well repair) (Hoisting machinery)

ABDULLAYEV, M.A., kandidat tekhnicheskikh nauk; KREPKOV, D.V., kandidat tekhnicheskikh nauk; PETROSYAN, V.A., kandidat tekhnicheskikh nauk; KHAIME, F.G., kandidat tekhnicheskikh nauk; UDALYY, A.M., redaktor; MEKHRALIYEV, K.M., tekhnicheskiy redaktor.

[New friction surface and its use in deep well pumps] Novaia poverkhnost' treniia i ee primenenie v glubinnom nasose. Baku, Gos.nauchno-tekhn.izd-vo neftianoi i gorno-toplivnoi lit-ry, Azerbaidzhanskoe otd-nie, 1953. 28 p. (MIRA 8:4)
(Surfaces) (Oil well pumps)

KULIZADE, Kyazim Novruz Ali ogly; POPOV, A.N. redaktor; UDALYY, A.M., vedushchiy redaktor.

[Increasing the power factor in petroleum enterprises] Povyshenie koeffitsienta moshchnosti na neftianykh promyslakh. Baku, Aznefte-izdat, 1954. 121 p. [Microfilm] (MLRA 10:5)

(Azerbaijan--Petroleum industry)
(Electric power)

MEKHTIYEV, Sh.F.; ZAVRIYEV, V.G.; UDALYY, A.M., red.

[Azerbaijan, treasure house ofoil] Azerbaidzhan- sokrovishch-nitsa nefti. Baku, Aznefteizdat, 1954. 130 p. (MIRA 15:7)
(Azerbaijan--Petroleum geology)

MIKHAYLOV, Konstantin Fedorovich; SHEVCHUK, Yu.I., redaktor; UDALYY, A.M., vedushchiy redaktor

[Deep oil well pump repair mechanic] Slesar' po remontu glubinnykh nasosov. Baku, Aznefteizdat, 1954. 166 p. [Microfilm] (MLRA 10:4)
(Oil well pumps--Repairing)

SPIRIN, Aleksey Andreyevich; TSEKUN, Naum Aleksandrovich; SALAM-ZADE, Makhmud Mekhti ogly; AL'BITSKIY, B.P., professor, redaktor; UDALOV, A.M., redaktor.

[Electric protection from corrosion of underground metallic structures] Elektricheskaia zashchita podzemnykh metallicheskikh sooruzhenii ot korrosii. Baku, Azneftizdat, 1954. 262 p. (MLRA 8:4)
(Electrolytic corrosion)

SHNEYDEROV, Moisey Ruvimovich; SAROYAN, Aleksandr Yervandovich; ALLAKHVERDIYEVA, Valida Aligeydar; DADASHEV, B.B., kandidat tekhnicheskikh nauk, dotsent, redaktor; UDALYY, A.M., redaktor.

[Threaded joints for drill strings and oil well casings] Rez'bovye soedineniia buril'nykh i obsadnykh kolonn. Baku, Azneftеizdat, 1955. 172 p. (MLRA 8:11)
(Oil well drilling--Equipment and supplies)

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress, Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Udanovskiy, M. A. (Khar'kov). On Holonomy Groups of Affine Connectivity Spaces. 174

DE'ANOKII, N.

Some problems in the final stage of drilling for petroleum deposits. Tr. from the Russian, p. 64. (NAFTA, Krakow, Vol. 11, no. 3, Mar. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, Jun. 1955, Uncl.

WOLANSKI, H.

New achievements of rationalizers in petroleum drilling, p. 66. (NAFTA, Krakow, Vol. 11, no. 3, Mar. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. No. 6, Jun. 1955, Uncl.

UDANSKIY, NIKOLAY YAKOVLEVICH

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Tekhnika i Tekhnologiya Bureniya Neftyanykh i Gazovykh Skvazhin v Shestoy Pyatiletke (Techniques and Technology of Oil and Gas well Drilling Under the Sixth Five-Year Plan, by) N. Y. Udanskiy, P. A. PALIY i L. M. TOMASHPOL'SKIY. Moskva, Gostoptekhizdat, 1957.

127 p. Illus., Diagrs., Tables.

KUTANOV, I.P. [Kutanau, I.P.]; UDAROV, B.G. [Udarau, B.N.]

Conditions for the preparation of activated coals from lignin.
Vestsi AN BSSR Ser. fiz.-tekh. nav. no.1:44-48 '64
(MIRA 17:7)

DERYABIN, V.I.; ZVEREV, A.M.; LYSIKOV, V.P.; UDARTSEV, Ye.P.

Building of a 47-ton displacement cruising yacht.
Sudostroenie 26 no.6:37-38 Je '60. (MIRA 13:7)
(Yacht building)

AVRAMENKO, P.G., inzh.; UDARTSEV, Ye.P., inzh.

Effect of heeling and trim difference on the speed of a sailboat.
Sudostroenie 27 no.9:45 S '61. (MIRA 14:11)
(Sailboats)
(Trim (of ships))

UDARTSEV, Ye.P., inzh.

Cruising yacht "Antarctica." Sudostroenie 28 no.1:41-46 Ja '62.
(MIRA 16:7)

(Yacht building)

UDARTSEV, Ye., inzh. (Nikolayev)

A "real vessel." Tekh.mol. 30 no.10:39 '62. (MIRA 15:12)
(Yachts and yachting—Models)

UDARTSEVA, M. G. (Petrozavodsk)

"The Frequency of Lexical Units in English Geological Literature."

Theses - Conference on Machine Translations, 15-21 May 1958, Moscow.

DEKHTYAR, B.; FISHER, L.; UDATOV, A. (g.Mogocha, Chitinskoy obl.); TOLETIY, P. (g. Yagotin, Kiyevskaya obl.); SOLODOVNIKOV, I. (Primorskiy kray); MUN'KO.T. (g. Zaporozh'ye)

Letters and correspondence. Sov.profsoiuzy 17 no.22:42-44 N '61. (MIRA 14:10)

1. Spetsial'nyy korrespondent zhurnala "Sovetskiye profsoyuzy".
(Community centers, Mobile)
(Ural Mountain region—Callisthenics)
(Adult education)

BRAYNINA, R.A.; MARGULIS, L.A.; KOVALEVSKAYA, I.L.; MITEREVA, V.G.; FERDINAND, Ya.M.; PUTRIN, N.G.; PAVLENKO, I.P.; TUPIKINA, V.A.; UDAVICHENKO, V.Ya.; KOBYZEVA, O.V.

Epidemiological effectiveness of dried alcoholic divaccine, enriched and nonenriched with Vi-antigens in school-age children and of Vi-antigens in preschool-age children in a typhoid fever outbreak. Zhur. mikrobiol.,epid.i immun. 40 no.12:18-22 D '63.

(MIRA 17:12)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta epidemiologii i mikrobiologii.

KOROTKOV, P.A.; LITVINOVA, Ye.I.; Prinimali uchastiye: ZVYAGIN, M.J.; ANDREYEV, N.F.; UDAVKOV, G.G.

Automatic recording of transformations in enameled cast iron during heating and cooling. Izv. vys. ucheb. zav.; chern. met. 6 no.11: 194-199 '63. (MIRA 17:3)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.